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UNIVERSITY OF ALBERTA

A REVIEW OF DACUM WORKSHOPS FOR BUSINESS EDUCATION DIVISION PROGRAMS AT GRANT MACEWAN COMMUNITY COLLEGE, 1984-1988

BY

DANA LYNNE GOEDBLOED

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF EDUCATION

IN

VOCATIONAL EDUCATION

DEPARTMENT OF ADULT, CAREER AND TECHNOLOGY EDUCATION

EDMONTON, ALBERTA
Fall, 1991

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P.A. Brook

A.K. Deane

L. Beauchamp

Date: Sept. 24, 91

DEDICATION

To my husband, Don,
whose love and encouragement
have been so vital.

ABSTRACT

The purpose of this study was to examine the effectiveness of the DACUM workshop process of occupational analysis in developing vocational curriculum for Business Division programs at Grant MacEwan Community College. Two specific research questions were identified to facilitate the development of the study and analysis of the data.

The data were gathered using a survey questionnaire with a sample of 35 participants (administrators, instructors and occupational experts) chosen from a list of 92 DACUM workshop participants. The response rate was 76 percent. The data was processed to determine frequencies and mean scores. Open-ended questions were analysed for recurring phrases and issues. Data were also gathered using interviews with a sample of nine participants, chosen from the respondents to the survey. The data were analysed for recurring phrases and issues.

Results of the study indicated that DACUM workshop participants at Grant MacEwan Community College, Business Education Division programs, generally perceived it as very effective for articulating the needs of industry with the business education curriculum. The research showed that DACUM workshop participants perceived the strongest aspect of the DACUM process to be the use of occupational experts.

Participants noted the weakest aspects of the DACUM workshop process to be slow follow-up procedures, lack of input by advisory committees, the need for better 'up-front'

orientation materials, and that all participants should attend workshops as active participants. Participants also indicated that better explanation during the illustration of the sample DACUM chart would have been helpful.

The results of this study indicate that participants of DACUM workshops for the Business Education Division at Grant MacEwan Community College were generally highly satisfied, although some areas were identified for improvement.

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CHAPTER I

INTRODUCTION

Business and industry have been caught in the dynamic progress of technology, thus requiring a need for constant change to occupational curricula. Business education training programs are responsibile for providing learners with the requisite knowledge, attitudes and skills for employment. Keeping up to date with changes in business occupational requirements enables business education curriculum developers an opportunity to ensure that programs are relevant to the needs of business.

The focus of vocational educational curriculum developers is to develop programs which will prepare students for a rapidly changing job market. The need for skilled and semi-skilled workers continues to increase. Too often delays in recognising the needs of society has caused a backlash on vocational education. Industry has become accustomed to the pace of change and, in turn, expects a supply of workers to fill jobs.

McMahon (1972:3) states that "vocational curriculum is the expression of vocational philosophy and conversely a working philosophy is the curriculum." In order to fulfill the basic philosophy of vocational education--the employment of students upon program completion - educational institutions must be prepared to keep pace with changing demands. It is therefore important that curricula developed for occupational programs be articulated with the needs of

business and industry. When developing curricula for occupational programs in business education, institutions often focus on graduates of the programs fulfilling the demands of an employment market. Occupational curriculum development involves more than graduate assessment, it should be a cooperative effort between institutions and industry. Each plays an important role toward articulating occupational programs.

One method used to articulate the needs of business and industry with postsecondary curriculum development is referred to as occupational or job analysis. An occupational, or job analysis, is conducted to determine: 1) the number and type of jobs available in an employment area, 2) necessity for, amount of, and type of training required, 3) employment conditions, and 4) additional training necessary for advancement (Calhoun, 1980). "Occupational analysis is thus a useful tool for the process of developing appropriate student learning experiences" (Braden & Paul, 1975:vi).

Conducting occupational analysis in workshop settings had become a popular means for articulation. These workshops are usually conducted as a "front-end" approach to vocational curriculum development involving administrators, instructors and experts from business and industry.

Crunkilton & Finch (1979) suggest that direct input be obtained from expert workers to ensure articulation. The

workshops can also be used for curriculum revision or updating as well.

During an occupational analysis workshop the performances, or tasks that a competent worker will perform are identified. The tasks are then analysed for importance and relevance to the occupation. From the list of tasks, competencies are determined. These competencies provide a framework for construction because "competence is the meeting of specific performance criteria" (Boulmetis, 1981:5).

The DACUM Process

DACUM (Developing A CurriculUM) is an occupational analysis process used by many postsecondary institutions to develop occupational programs. The DACUM approach of occupational analysis includes using occupational experts during workshops to identify the tasks a competent worker will perform. The function of a DACUM workshop is to bring together institutions, business and industry to articulate curriculum development in occupational programs.

At Grant MacEwan Community College (GMCC), a postsecondary institute located in Edmonton, Alberta, the DACUM process is utilized in performing occupational analysis for all occupational areas, including business education. GMCC has the second largest enrollment in Business Division programs in the province of Alberta, after Mount Royal College in Calgary (Moreland, 1977).

Through their Research, Development and Evaluation Division, GMCC conducts periodic evaluations of all programs, as per Board policy requirements. Although the programs are being evaluated to determine strengths and weaknesses for the purpose of curriculum revision, the occupational or job analysis process - DACUM - had never been examined.

Purpose of the Study

The purpose of this study was to examine the effectiveness of the DACUM workshop process of occupational analysis in developing vocational curriculum for Business Division programs at Grant MacEwan Community College.

Two major research questions were identified:

1) How effective do the participants (administrators, instructors and occupational experts) perceive the DACUM process for articulating the needs of industry for the business education curriculum?
2) What are the perceived strengths and weaknesses of the DACUM process of occupational analysis?

The perceptions of the participants in the workshops--administrators and instructors from the college, and experts from business and industry--are important indicators of DACUM as an effective curriculum development procedures.

Significance of the Study

This study has both practical and theoretical significance. The results should be of interest to those who have participated in DACUM workshops, to those who have used DACUM but never evaluated its effectiveness, and to those who are interested in expanding the focus of DACUM.

Many institutions and organizations who use the DACUM workshops may find it relevant to their operation when developing curricula. The results of this study can be used by institutions and organizations to provide information for planning the workshops and identifying where the strengths and weaknesses may appear.

Finally, the results of this study may yield some awareness for the need for further research in the area of DACUM workshops.

Definition of Terms

The following operational definitions are included to clarify terminology used in this study:

Administrator. A person who is responsible for any or all of the following duties within an educational institution: initiation and development of programs, curriculum and program evaluation, initiation of research activities and education-business cooperation (Nolan, Hayden & Malsbary, 1963:540).

Articulation. The distinct joining or juncture of two elements (Concise Oxford Dictionary:52). The two elements,

for the purpose of this study, are postsecondary occupational programs and business and industry.

Business Education Curriculum. The provision of training for specialized jobs, including developing abilities to utilize skills and knowledge in the business environment. (Tonne & Nanassy, 1970).

DACUM (Developing A CurriculUM): Process used to establish relevant, up-to-date, and localized curriculum base for instructional programs (Norton, 1985:2).

Effectiveness. For the purposes of this study, effectiveness refers to actual useability, employing indicators related to the DACUM process.

Employable. For the purposes of this study, employable refers to a person who has obtained the necessary knowledge, attitudes and skills required to perform a particular job.

Occupational Expert. An individual with a high degree of skill and knowledge in an occupation who is aware of current developments and needs in the field (Norton, 1985:21).

Instructor. Any person designated to provide a particular segment of instruction within a course (McGechaen & Persons, 1986:18).

Occupational Analysis. The means for identifying and organizing that part of instructional content which is relevant to targeted performance situations (Braden & Paul, 1975:vii). Is also referred to as job analysis.

Vocational Curriculum. A body of prescribed educational experiences under school supervision designed to prepare the

individual for a role in society and to qualify him/her for a trade or profession (Calhoun, 1980:171).

Assumptions

The following assumptions were included because of the lapse in time since some workshops were conducted and this examination:

1) that administrators, instructors and experts could recall the DACUM process as a means for identifying competencies and skills in a specific occupational area;
2) that administrators, instructors and experts would recall their experiences during the DACUM workshops.

Delimitations

The study was delimited to GMCC, Business division. Grant MacEwan Community College was chosen because of the availability of information regarding DACUM workshops since the college began using the process in 1980. The study was further delimited to only those DACUM workshops conducted between 1984-1988. Workshops conducted earlier than that period had been eliminated because of difficulty in locating participants.

The study focused on the following programs for which DACUM workshops within the Business Education division had been conducted (dates of the workshops are listed to the right):

Library Technician Program	1984
Agency Managers and Fund Raisers	1986
Applied Research	1986
Management Studies	1986
International Business Certificate	1987
Integrated Distribution Management	1987
Retail Management	1988

Limitations

Two programs, which had utilized DACUM during this time were not included in the study. The Legal Assistant program, for which a DACUM workshop was conducted in 1984 was not included, because administrators and instructors involved in the workshop were no longer at the college. The Voluntary Sector Management program, for which a DACUM workshop was conducted in 1987, was not included in the study, because it was conducted out of town.

Organization of the Study

Chapter I provided a brief description of the purpose of this research and the two specific research questions that were investigated. As well, definitions of the terms used, assumptions, delimitations and limitations of this study were outlined.

Chapter II contains a review of the relevant literature concerning this study. The literature is organized in three sections: vocational education, curriculum development for

business education programs, and the DACUM process of occupational analysis.

Chapter III provides a description of the research methodology including a discussion of the survey method, instrumentation, pilot testing, interviewing, ethical considerations and procedures used for data collection and analysis.

Chapter IV contains a discussion and analysis of the findings from the questionnaires and interviews. Chapter V consists of the summary, conclusions and recommendations of the study.

CHAPTER II

REVIEW OF THE LITERATURE

The review of the literature began with a systematic search of computer references by title, subject, and author at the University of Alberta. A "Spires" search was conducted to locate any journal or ERIC document references related to the research topic. References were also located from bibliographies of relevant sources. The review of the literature focused on curriculum development for business education and vocational education, and occupational analysis.

A number of descriptors closely related to the terms above were used in the search to draw out further research. Those descriptors included job analysis, curriculum development for vocational education, curriculum development for business education, needs assessment, and task analysis. Terms were used interchangeably by some authors, whereas in other instances they were clearly identified.

The method utilized to articulate the needs of industry with the development of curricula by postsecondary institutions is referred to as "job analysis" or "occupational analysis." For purposes of simplification the term occupational analysis will be used throughout. A further clarification within this chapter is the use of the term "occupational programs" as interchangeable with vocational education.

The literature review is presented in three areas to reflect the three basic components of business education curriculum development: 1) vocational education, discussing the basis for developing occupational programs, 2) business education curriculum development, discussing the area for which the occupational program is being developed, and 3) occupational analysis, discussing the rationale for occupational analysis, the DACUM process of occupational analysis, and modifications to DACUM.

Vocational Curriculum Development

The first section of the literature review deals with vocational education. A brief overview of its foundations, history, and philosophy are outlined. By examining the foundations, philosophy and history of vocational education it becomes possible to determine why it has become so important that educational institutions and industry join forces in developing curricula for occupational programs in business education.

Foundations, History and Philosophy of Vocational Education

The foundations of vocational education were based on the "callings" of the Church, the Law and Medicine, the major subjects of ancient universities and jobs in the community. Over the centuries the definition and focus has changed to denote preparation for a specific job or range of jobs, and thus made it synonomous with occupational education (Weir, 1985).

The change in definition came about to reflect the three components of vocational education: 1) people, 2) society, and 3) technology (Thompson, 1973). Each of these components is inter-related and offsets the others. People are the resource and product of vocational education; who in turn contribute to society and the development of technology. Vocational education acts as the catalyst to ensure that people are resourceful and productive so that they may continue to contribute to society and technology.

Since all three have been identified as basic components of vocational education, and are inter-related it would appear that all, to a degree, have some influence on the development of vocational education curricula. The evolution of people, society, and technology are embodied in the foundations of vocational education.

Three distinct ages can be identified in the history of vocational education curriculum development. Changes in society, from agrarian, to industrial, to technological, have necessitated changes in vocational education. Each of these ages has contributed to furthering the methods utilized in developing vocational curricula.

The agrarian society was self-sufficient and self-supporting. Vocational education was familial; the trade or occupation of the father was passed on to the son. Structured vocational programs were not a necessity. Informal apprenticehsip was sufficient as a means of passing

on trade skills. The system utilized during the agrarian age was simple and effective.

Comenius, Locke and Rousseau were largely responsible for the major changes in the traditional apprenticeship system (Crunkilton & Finch, 1977). They proposed that trade subjects and manual arts should be introduced into the formal education system. Vocational education thus became a part of the formal curricula.

At the onset of the Industrial Age vocational programs declined steadily. Education, in general, was undervalued as demand was placed on cheap, unskilled workers. As the Industrial Revolution progressed, however, the demand shifted to more skilled workers. Vocational education once again became an important part of the formal education system.

John Dewey was an strong proponent of the move to integrate vocational education into the formal education system; "he favored vocational work in schooling, not as a distinct but as an integral part of the curriculum." (Baker, 1966:119).

The importance of vocational education and the need for skilled workers also brought about the realization that vocational curriculum development required a more systematic approach. A Russian system, introduced in the United States in 1876, illustrated that "hands-on" experience, within schools was extremely beneficial (Crunkilton & Finch, 1979).

The system was adopted in the United States and remains the basis upon which today's curriculum is developed.

The accessibility of post-secondary institutions and occupational education programs since the end of World War II has presented more chances to prepare people for jobs than would have been the case if on-the-job training was the only source of job preparation (Gillies, 1973). That accessiblity has also placed a demand on vocational curriculum developers to prepare curricula which meets industry's needs.

Since the launching of Sputnik, by the Soviets, in 1958, technological knowledge has come into demand. Rapid changes have necessitated more specialized training. Occupations which had previously been in high demand are now going the way of the dinosaurs. The future needs of workers appears almost instantaneously as technology advances. The most important resource has shifted from natural to human.

The focus for vocational curriculum developers is now to develop programs which will prepare students for a rapidly changing job market. The need for skilled workers, as well as semi-skilled workers, has increased. Too often delays in recognizing the needs of society has caused a backlash on vocational education. Industry has become accustomed to the pace of change and in turn has expected a supply of workers to fill jobs.

McMahon (1972:3) has stated that "vocational curriculum is the expression of vocational philosophy and conversely a

working philosophy is the curriculum." In order to fulfill the basic philosophy of vocational education - being the employment of students upon program completion - the educational institutions must be prepared to keep pace with changing demands.

Since neither people, society, nor technology are static, it would appear that vocational curricula must constantly change. In order to ensure that vocational education programs embody the foundations and philosophy of vocational education, vocational curriculum design must remain faithful to its three basic components of people, society and technology.

Business Education Curriculum Development

The following section presents a review of the literature related to the foundations of business education. The purposes are discussed to outline the types of business education identified when developing curricula. The concept of articulation, and its role in developing curricula for business education programs completes this section.

Foundations of Business Education

The foundations of business education are congruent to the foundations of vocational education "since the overriding purpose (for business education programs) is vocational preparation" (Daggett & Branigan, 1987:3). The vocational aspect of business education suggests that

utilizing occupational analysis to develop curriculum for programs may be appropriate.

Business education programs first appeared during the latter part of the 19th century. Programs were offered through private institutions to meet a need for occupational training (Daggett & Branigan, 1987). Publicly funded community colleges were established "to help meet the educational needs of the community that it served." (Crank & Crank, 1977:14). Publicly funded postsecondary institutions have become the major suppliers of graduates to fill positions in business.

Purposes of Business Education

The purposes of business education include providing training for specialized jobs, as well as developing abilities to utilize skills and knowledge in the business environment (Tonne & Nanassy, 1970). It is therefore important that postsecondary institutions recognize what is required by business when developing programs. Business needs should determine what skills and knowledge would be included in programs.

Two types of training are identified when developing programs. These are general and specific training. General training provides only those skills and knowledge required to enter an occupation. General training can then be transferred to apply to several jobs in the business environment. Specific training provides the learner with

only those skills and knowledge necessary to perform a particular job. Table 2.1 provides an outline of the general and specific training functions (Tonne & Nanassy, 1970:9).

It is therefore important that curriculum developers in postsecondary institutions recognize both general and specific skills and knowledge required by business when developing programs. Mager (1967:3) states that "it is appropriate to adopt a job-oriented point of view so that only the most relevant subject matter and learning activities are built into the course."

Table 2.1

General and Specific Training Functions of Business Education

General Business Education Function	Specific Training For Business Education
1. Basic business education for all.	1. Occupational intelligence (A specialized phase of human resources.
2. Prevocational business education for those planning to enter business.	2. Specific skills training.

Business has been caught in the dynamic progress of technology, thus requiring constant changes to occupational programming. Business education curriculum developers must therefore provide learners with the opportunity to enter

jobs at different levels. Curriculum developers are faced with constant reevaluation and modifications to curriculum in order to reflect the evolving needs of business. Keeping in tune with changes in business enables curriculum developers to ensure that programs are relevant to the needs of business.

Articulation

Articulating curricula to the needs of business is necessary if business education programs are to maintain relevancy and credibility. Walls (1977:120) has stated that "articulation in particular has and probably to some degree will always be a problem for curriculum developers." The effort to communicate with business to determine their needs, although problematic, is paramount as technology progresses.

The strength of an articulated planning effort lies in its ability to widen the scope of concern for service delivery, as well as its potential for promoting the accommodation and integration of multiple needs and interests (Finch & McGough, 1982). Involving members of the business community in curriculum development provides a strong link with the educational institution. That link, in turn, will ensure that the primary focus of vocational education is being met - preparing students for work.

The articulation of programs is imperative in that students are not only being prepared for work, but they must also be prepared to meet the needs of prospective employers.

Occupational Analysis

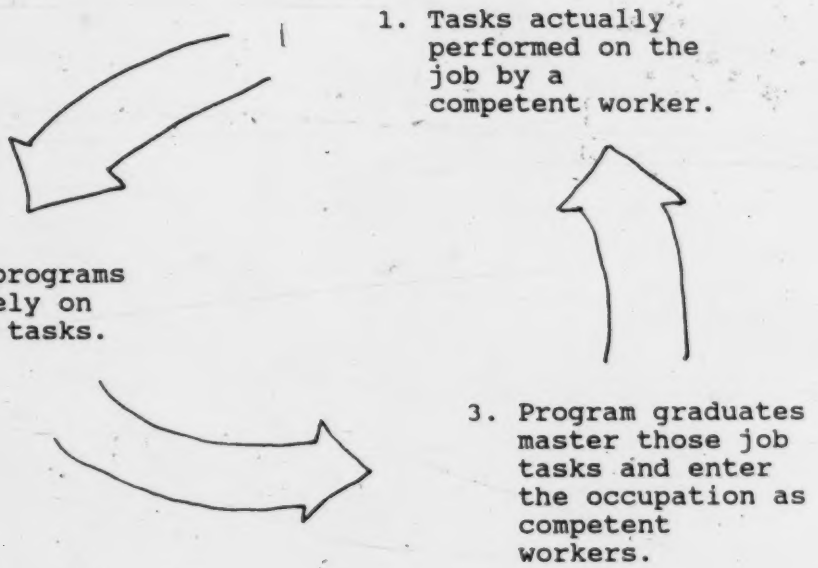
This section discusses the literature related to the role of occupational analysis in developing curricula for occupational, and in particular, business programs. The rationale for using using occupational analysis is presented, as well as an explanation of the DACUM process. A discussion outlining modifications made to the DACUM process by two users completes this section.

Rationale for Using Occupational Analysis

Thompson (1973:15) stated "vocational education has found itself concentrating to provide instruction for jobs that were already declining in numbers and of decreasing importance to the occupational system." The issue here being that current programs offered by educational institutions are not necessarily articulated with the needs of industry. Occupational analysis therefore becomes the process, within vocational curriculum development, which brings together educational institutions and industry to develop occupational programs. The occupational analysis identifies the performances or tasks that a competent worker performs. Figure 2.1 provides an illustration which describes the process of occupational analysis (Blank, 1982:65).

Figure 2.1

Occupational Analysis Process


1. Tasks actually performed on the job by a competent worker.
2. Training programs based solely on those job tasks.
3. Program graduates master those job tasks and enter the occupation as competent workers.

Note. The competence referred to is the meeting of specific performance criteria (Boulmetis, 1981).

"Occupational analysis provides a set of useful tools for the process of developing appropriate student learning experiences" (Braden & Paul, 1975:vi). Conducting these analyses in workshop settings has become a popular method for vocational curriculum designers to articulate occupational programs with the needs of industry.

An orderly approach, which includes all important phases of occupational analyses, helps ensure the success of the development process. Of primary importance is that occupational analyses are conducted to determine: 1) the number and type of jobs available in an employment area, 2)

necessity for, amount of, and type of training, 3) employment conditions, and 4) additional training necessary for advancement (Calhoun, 1980). By first exploring which occupations require training programs, the institution has satisfied the pre-requisite that students will be employable upon program completion. If no jobs exist for a particular occupation, there is obviously no need to conduct an occupational analysis.

The most important sources of information include industry and business experts (Abella, 1986) who can best identify what skills and competencies are required for an occupation. "Proper representation of expert workers and supervisors... is <u>essential</u> to obtaining a relevant analysis of the occupation" (Norton, 1985:20).

Educational institutions must be prepared to seek and contact expert workers for input during occupational analysis, which forms the core of the curricula. These experts can be identified by a variety of sources such as local chambers of commerce, business and industry associations, or government offices. A common number of expert participants during occupational analyses workshops is ten to twelve.

Educational institutions require some lead time in planning for curriculum development. The curriculum must be "an orderly, predetermined series of educational experiences designed to assist a student in the fulfillment of an educational goal" (Giachino & Gallington, 1977:26).

Although not all aspects of a particular occupation can be included in the curriculum, the basic, or core concepts will be identified. An occupational analysis workshop acts as the lead to developing occupational programs curricula.

During an occupational analysis workshop, administrators and instructors from the institution, and occupational experts related to the occupation being analysed, come together to form a committee. Each committee member is assigned a specific role; administrators and instructors are to observe, and occupational experts are to identify the attitudes, skills and knowledge required of workers.

Wentling (1980:45) emphasizes "the most important feature is a firm commitment on the part of all individuals." The combined efforts and commitment of administrators, instructors and experts from industry can thus be used to identify the important curricula.

The DACUM Process

One process of occupational analysis which has proven successful is DACUM (Developing A CurriculUM). DACUM was originally created in the late 1960's through a joint effort of the Experimental Projects Branch, Canada Department of Manpower and the Learning Corporation of New York (Hoggard & Pedras, 1985). It was first used to provide technical direction to produce a curriculum guide for The Womens Job Corp Program in Clinton, Iowa. The process was adopted by

the Nova Scotia NewStart Corporation in 1968, and shortly thereafter by the Saskatchewan NewStart Corporation and the Vocational Education Section of the British Columbia Department of Education (Sinnett, 1976). DACUM has since been used extensively by many institutions for developing curricula in several occupational programs.

DACUM is based on three assumptions: 1) expert workers can define and describe their job more accurately than anyone else; 2) any job can be effectively described in terms of the tasks that successful workers in that occupation perform; and 3) all tasks, in order to be performed correctly, demand certain knowledge and attitudes from workers (Klingman & Gardner, 1982).

The value of DACUM can be measured in time, cost and public relations. The DACUM process can be completed in one to two days. Committee members volunteer their time, which reduces costs. The public relations factor is very important in that business and industry are usually pleased to be part of the curriculum development decision-making process. Sinnett (1976:193) provided a comprehensive list of the advantages and disadvantages of DACUM. The list is shown in Table 2.2.

The DACUM Handbook was developed by Dr. Robert Norton of the National Center for Reasearch in Education at Ohio State University, in 1985. The handbook was developed to provide a guide for facilitators to conduct DACUM workshops, in a comprehensive and orderly manner.

Table 2.2

Summary of Advantages and Disadvantages of DACUM

Advantages	Disadvantages
1. Chart is a device for staging systematic instructional development.	1. The specificity of the chart depends heavily upon the skill and expertise of the co-ordinators.
2. DACUM is a flexible tool, not an end in in itself.	2. The DACUM committee can reflect local biases.
3. It can be done quickly.	3. The committee may build upward mobility into the chart-making the job look more difficult than it is.
4. It is a way of becoming responsive to local and community needs.	4. Additional skills are required to operationalize charts.
5. The chart allows for rational evaluation of students.	5. DACUM charting does not help with deciding on or developing ways for students to learn.
6. The instructor can get a picture of the entire program.	6. Instructors may ignore the behavioral statements and proceed with content.
7. DACUM charting aids communication, pre-requisite identification and student tracking are made easier. Other institutions, instructors and agencies can easily see the nature of the program.	7. DACUM charting has not been shown to apply to all areas; it works well with skills.

Until the DACUM handbook was developed, the DACUM process was being "used differently" (Sinnett, 1976:22) by different institutions. The handbook outlines, in detail the phases and steps which should be included in an

occupational analysis. The steps include construction of an occupational task chart (workshop), verification of the chart, as well as development of goal and objective statements. The verification of the chart and development of goal and objective statements are completed after the workshop.

Facilitators at Grant MacEwan Community College, Research, Development and Evaluation Division use the DACUM Handbook as a guide for conducting DACUM workshops. They have been using the DACUM process since 1980 to develop curricula for the Business Education Divison.

The focus of this research is on the occupational analysis workshop, which is the first phase in developing curricula using the DACUM process. The process begins by using an advisory committee, if there is one, to determine what occupations should be analysed, and identifying employers serve as committee members.

The DACUM committee usually consists of eight to twelve expert workers; there should never be less than five. Norton (1985:10) points out that "instructor(s) should never serve as participants on the committee, although they are probably the best single source for identifying potential employers and/or participants." At Grant MacEwan Community College administrators and instructors are involved in the workshop as committee members, but only as observers.

The Research, Development and Evaluation Division at GMCC contacts prospective committee members, by letter, 30-

90 days before the workshop to provide information about their purpose and role on the committee. The letter is sent far in advance of the planned workshop, so as to provide lead time for facilitators and committee members.

A pre-workshop session and six steps are performed during an occupational analysis workshop for constructing a DACUM chart. The steps are, in order of sequence (Adapted from DACUM Handbook, 1985):

1) Review the occupation
2) Identify general areas of responsibility
3) Identify specific tasks performed
4) Review and refine task and duty statements
5) Sequence the duty and task statements
6) Identify the entry level tasks.

The first step, reviewing the occupation, is conducted by requesting committee members to identify job titles. The relationship between job titles and the occupation being analysed can then be established. A working definition of the occupation will emerge when reviewing the occupation; this definition is then agreed upon by all committee members.

The second step consists of a brainstorming session. Here the broad areas of responsibility are identified, and care taken that committee members are not identifying specific tasks performed. The brainstorming session

continues until the committee members have exhausted the areas of responsibility for the occupation.

During the third step, a second brainstorming session will delineate the specific tasks performed within the duty areas. By stipulating that the tasks must be stated in behavioural, observeable terms the committee will not be including tasks which are difficult to assess or evaluate. Psychomotor and affective domain skills will also be identified.

The fourth step provides participants the opportunity to review the tasks identified in the previous step. Each task statement is reviewed to ensure accuracy and precision. Task statements are short sentences describing the actions performed and objects involved in performance (Carlisle, 1986). Statements should appear only once, and clarification provided for those tasks which appear ambiguous.

The fifth step, sequencing the duty and task statements, is invaluable to the chart construction. At this time, relationships betweens skills and job-entry requirements become apparent. The duty statements can then be arranged, according to the sequence in which they should be presented in the curriculum.

The identification of entry-level tasks is completed as the sixth step of the worskhop. In order to ensure that the institution is offering occupational programs which guarantee graduates employment, the minimum requirements of

business must be specified. Articulation is guaranteed, to a degree, upon completion of the workshop and construction of the DACUM chart.

The cooperative efforts of postsecondary institutions who have hosted the occupational analysis workshop, and business experts who participate, should result in a chart which can be used as the basis for developing curriculum in business education programs. The chart, which includes all duties and tasks identified during the workshop is constructed after the DACUM workshop. The chart is validated by occupational experts, other than those involved in the workshop, to ascertain the requisite skills, knowledge and attitudes have been identified. See Appendix VII for a sample DACUM chart.

DACUM Modifications

Wentling (1980:38) points out that "the design of the system should be specific to the needs of the local education or training program. No design will be universal for all situations." With that statement in mind, Daytona Beach Community College in Florida, and the Ministry of Education for the Province of British Columbia made modifications to the DACUM process to better reflect their needs.

Klingman and Gardner (1982) outlined two modifications to the DACUM process made by Daytona Beach Community College: 1) a pre-orientation session, and 2) visits by

DACUM coordinators to job sites. The pre-orientation session helped committee members better focus their attention on producing concise behavorial characteristics of the occupation. The pre-orientation session made it possible to complete the workshops in less time. Sending DACUM coordinators to the job sites prior to the workshop enabled them to observe first-hand the tasks performed. The visits helped coordinators to make appropriate, knowledgeable suggestions to facilitate the process.

The DACUM process was used by the Ministry of Education to develop training programs. Several recommendations were proposed by Mason (1984) to refine the process. The most notable of those refinements were that: 1) it was essential that time be taken to deal with group concerns, 2) both individuals and groups review the chart, and 3) all members of the committee participate.

It was recommended that more time be taken, before orientation sessions, to address the concerns and expectations of committee members. This would also help members of the committee to become more comfortable and familiar with their role, and each other. Mason also recommended that individuals, as well as the group review the charts, to ensure that the less vocal participants contributed. A further recommendation was that committee members, other than occupational experts, should not be encouraged to attend as observers. Mason points out that

they inhibit the development of trust and openness, and should attend workshops as active participants.

The revisions and refinements completed by both Daytona Community College, and the Ministry of Education, show that the DACUM process is flexible to meet the needs of the particular institution or training program.

Summary

The three basic components of vocational education--people, society and technology have a direct relationship on occupational analysis. Changes in society and technology dictate that people change occupations. Identifying who (people) will perform the jobs, for whom (society), and how (technology) are all included in the occupational analysis process.

The face of business education programs has changed a great deal in the past century, however its foundations have not. The identification of two types of business education, general and specific, enables curriculum developers to develop programs which reflect the needs of each. The main objective of each type of program is to enable the learner to gain employment upon completion. In order to ensure this, curriculum developers have become more aware of the importance of articulating programs to the needs of business. This can be done by conducting workshops with representatives from both the postsecondary institution and occupational experts participating.

Conducting occupational analysis has become a method for postsecondary institutions to keep in touch with business demands. Curriculum can be modified, revised, or implemented by conducting occupational analysis which articulates the needs of business with training programs. The DACUM process of occupational analysis has been implemented by several postsecondary institutions, Grant MacEwan Community College being one.

It is clear that the DACUM process allows for revisions which reflect the needs of the institution or training program. The review of the DACUM process completed by Daytona Beach Community College and the British Columbia Ministry of Education show modifications made to fit their needs. Those modifications, when implemented, proved to enhance the process.

The joint efforts of business and curriculum developers in developing curricula using DACUM can result in both parties feeling they have developed responsive business education programs. The DACUM process includes those phases and stages which adhere to the basic requirements which should be included in any occupational analysis.

CHAPTER III

METHODOLOGY

This chapter describes the construction of the questionnaire and interview procedures, selection of the sample, administration of the instrument and interviews, and the procedures used to analyse the data.

Selection of the Sample

A total of 35 participants were selected for this study. The participants included five administrators and ten instructors from GMCC, Business Education Division, and 20 experts from business and industry.

The researcher obtained a list, from the Research, Development and Evaluation division at GMCC, of names, addresses and phone numbers of ninety participants in the DACUM workshops for the Business Education Division at GMCC for 1984 to 1988. Seven workshops were held during 1984-1988 for the following programs: Library Technician, Fund Raisers, Applied Research, Management Studies, International Business, Integrated Distribution Management, and Retail Management.

A letter was sent by the DACUM facilitator to each of the program heads requesting their assistance in selecting names for the study (see Appendix I). This letter introduced the study and the researcher, and indicated the researcher would be contacting each program head in the near future.

The researcher then contacted the program heads, met with them, and determined who should participate in this study. Thirty-five individuals were identified across the seven programs. Particular selection emphasis was based on availability (within the immediate area) and representation (administrator, instructor or occupational expert).

The researcher was provided with five additional names, addresses and telephones numbers of participants in DACUM workshops for programs in other divisions at GMCC during the same time period, to contact for assistance with the pilot study. These names were also provided by the Research, Development and Evaluation Division.

The administrators and instructors were all from GMCC. All had participated in at least one DACUM workshop conducted for the Business Education Division between 1984 and 1988. The content experts were from a variety of occupational backgrounds, and all were located in the Edmonton area.

Nine participants, three from each group of administrators, instructors and experts, were selected to be interviewed through telephone contact two weeks after the questionnaires were distributed.

The Questionnaire

A questionnaire format was selected by the researcher as a method to collect data for this study. The construction of a survey instrument for this study arose

from the lack of existing materials to measure the effectiveness of DACUM as a form of occupational analysis, as perceived by administrators, instructors and experts involved in the process.

In order to gather information and/or questions relevant to the research questions, several resources were examined. Specifically books, journals and literature related to business education curriculum development, occupational analysis, and the DACUM process were used to obtain content for the questionnaire. The questionnaire was organized in three sections: demographic information, the DACUM process, and participant perceptions.

Part I - Demographic Information

In Part I gender, age, and five questions about knowledge and involvement with DACUM workshops were asked. Specifically, respondents were queried about their age, gender, and role on the DACUM committee (administrator, instructor or occupational expert), the number of years employed, participation in other DACUM workshops, and familiarity with the DACUM approach of occupational analysis prior to the Business Education workshops.

Part II - The DACUM Process

Part II of the questionnaire was divided into two sections - A: Pre-Workshop, and B: The DACUM Workshop. Part B was then subdivided into the six steps of the DACUM workshop: Step 1, Orientation; Step 2, Reviewing the

Occupation; Step 3, General Areas of Responsibility; Step 4, Identification of Specific Tasks; Step 5, Review and Refinement of Task Statements and Duty Areas; and Step 6, Sequencing Task Statements and Duty Areas. The statements for each of the steps were derived from the process outlined in The DACUM Handbook (Norton, 1985:35-60).

For each part of the DACUM process (pre-workshop and workshop) respondents were asked about occurrence and importance of specific items. The 5-point Likert scale was chosen because it is one of those most frequently used to measure attitudes or perceptions (Moore, 1983:203). Occurrence was scaled from Clearly Lacking (1) to Clearly Evident (5). For importance, the scale was from Very Unimportant (1) to Very Important (5). Both scales used "undecided" for the middle point. After each section in Parts A and B, an open-ended "comment" section was provided for additional responses about the specific phase/step.

Part A: Pre-Workshop. The items in this section of the instrument asked six questions about information participants had received prior to the actual workshop. Specifically, the researcher wanted to know if they had been provided with an explanation of the workshop process, informed of their role in the workshop, terminology to be used, expected outcomes, need for the workshop, and informed in adequate time to participate.

Part B: The DACUM Workshop. In this part of the instrument, 39 statements relating to the six steps involved in the DACUM process were asked. Orientation items (Step 1) were included to determine if the participants had received straightforward explanations of the procedures and concepts involved in the DACUM workshop. The major purpose of Step 2: Reviewing the Occupation was to clearly establish the parameters of the occupation to be analyzed. Step 3: General Areas of Responsibilities involved developing statements that reflected functional areas of responsibility under which all the specific tasks would fit in a Business Education program.

The fourth step, Identification of Specific Tasks, involved taking each duty area (what the worker will do) and specifying six or more tasks (how the worker will do the duties) that are performed by workers fulfilling duties in that area. Step 5, probed the extent to which the duty areas and task statements were reviewed, clarified and refined during the DACUM workshop. The last step, Step 6: Sequencing Task Statements and Duty Areas, explored the occurrence and importance of organizing the tasks into some logical sequence. The participants were also to indicate their preference for sequencing duty areas from the top to bottom on the DACUM chart.

Part III - Participant's Perceptions

This part of the survey explored participants' perceptions about their experiences in the DACUM workshops for business education. Eight open-ended questions which complemented the research questions solicitied in-depth responses.

Questions 1 and 2 related to the second major research question - What are the perceived strengths and weaknesses of the DACUM process of occupational analysis? The third question addressed the first major research question - How effective do workshop participants perceive the DACUM process for articulating the needs of industry for the business education curriculum?

The remaining questions reviewed the DACUM process regarding the time taken to complete the workshop, the perceived effectiveness by participants of their role as a committee member, appropriateness of the number of participants, and the effectiveness of DACUM as a process for occupational analyses. Participants were also asked to provide any suggestions they had for future DACUM workshops.

Pilot Study

The instrument was piloted prior to data collection. During its development, the instrument was reviewed by an experienced DACUM facilitator from Alberta Agriculture. This review enabled the researcher to refine the

questionnaire before the pilot test was completed by a larger group of five.

The five individuals chosen to pilot the questionnaire were all familiar with the process as they had participated in DACUM workshops for divisions other than Business Education at GMCC. They included one administrator, one instructor and three content experts. A letter outlining the purpose of the pilot study and the participant's roles solicited their assistance (see Appendix II).

The pilot testing was completed over a one week period, in mid-May, 1988. The researcher went to the place of employment of each of the pilot participants to administer the questionnaire. Participants were asked to provide feedback on the effectivness of the instrument and if the time taken to complete was appropriate. After administration of the instruments participants gave feedback about any problem areas, and the time required to complete.

Based on their feedback, the questionnaire was revised extensively to simplify statements, clarify ranking scales, delete questions or statements which were ambiguous, modify the order of statements, change format and add explanatory statements.

Those revisions included the following changes:

1. Items 4 and 5 in the demographic section did not originally request respondents to identify only one choice. The words "Circle one only" prevented respondents from providing multiple responses.

2. One item was deleted from the questionnaire.

3. The introductory statement for Part II was expanded for greater clarity.

4. An illustration, example and explanation of the rating scale as it applied to a statement were provided.

5. The headings and sub-headings were re-numbered and lettered to allow clarity of organization and ease of completion.

6. In Part 1: B (DACUM Workshop,) sections for comments were included after each step, rather than only at the end of the entire section.

7. Several questions within the specific step sections were re-ordered for clarity and sequence.

8. Several items were changed from the personal "I" to the more generic "participants" or "we."

9. Spacing of the responses was improved by moving the ranking scales to the right.

10. In Part III, Participant Perceptions, four questions were changed to a more open format.

The Interview

Nine interviews were held with three each of the administrators, instructors and occupational experts. A semi-structured format was used to explore three objectives: 1) to elicit participant perceptions of the DACUM process, 2) to understand how participants felt they could more effectively participate during the DACUM workshop, and 3) to

understand participant perceptions of effectiveness of the DACUM process for articulation.

The specific interview questions were: 1) Describe your thoughts and reflections on the DACUM process, 2) How could you have been a more effective participant in the DACUM workshop, and 3) Did you perceive the DACUM workshop as effective for articulating the needs of industry to develop occupational programs.

Data Collection

Questionnaire. A package which included a covering letter (Appendix V), envelope and return form for verification of return, and the questionnaire (Appendix VI) was sent to each of the 27 participants. The covering letter explained the purpose of the study, the role of the participants in the study, and established a deadline date of June 15, 1988 for the return of the completed questionnaire.

The package also included a self-addressed return envelope for return of the questionnaire and return form. The return form was used to verify the return of the questionnaire. This was done by checking off the name of each participant as they returned the questionnaire. The return form was then destroyed.

The packages were mailed on May 20, 1988. One week after the packages were mailed the researcher contacted all participants, by telephone, to verify receipt. Follow-up

letters (see Appendix VII) were mailed two weeks after initial mail-out to non-respondents, as per the list of returned surveys kept by the researcher. The letters were sent to extend the initial deadline because of a low return rate. A total of 27, or 76% of the questionnaires were returned, after a two week extension to the initial deadline.

Interviews. The researcher went to the place of employment and conducted an individual interview, lasting from 40 minutes to over one hour. At the beginning of the interviews the purpose of the interview was explained and participants were given a copy of the interview schedule (see Appendix III). A conversational format was followed, with responses recorded in shorthand.

Each interviewee was provided with a consent form (see Appendix IV) and given the right to opt out of the study or not respond to any question. They were told that all responses would be reported anonymously. The consent form further stated that all transcriptions would be destroyed upon completion of the study. The interviewee and researcher signed the form and both retained a copy.

Analysis of the Data

The data were analysed according to the three parts of the questionnaire and the interview responses. Those items in the questionnaire which provided numerical values or ranking scales were analysed in terms of frequencies and

means. Data collected from comment areas were analysed for recurring phrases and issues.

With the assistance of a computer consultant from the Department of Educational Research Services at the University of Alberta, the researcher coded the responses on the questionnaire in the space provided. The coded information was entered into the Lotus 1-2-3 Spreadsheet Package by the researcher.

The demographic information, Part I, was analysed for frequencies and percentages. The structured questionnaire items in Part II, The DACUM Process, were analysed for mean scores. For ease of analysis, the initial 5-point scale (Part II) was collapsed into a 3 point scale. The three-point scale for Occurrence became 1) Not Evident, 2) Undecided, and 3) Evident. The three-point scale for Importance became 1) Unimportant, 2) Undecided, and 3) Important.

Responses from open-ended comments in Part III, Participant Perceptions, were analysed for recurring phrases and issues. The researcher transcribed the shorthand notes from the interviews and analysed them for recurring phrases and issues.

Summary

For this study, a questionnaire and interview schedule were developed to collect data about participant

background information, the DACUM process, and participant perceptions.

The sample of 35 for the questionnaire were identified from a list of ninety names provided by the Research, Development and Evaluation Division at GMCC. From these, nine interviewees were selected by the researcher.

The data from the questionnaire were analysed for frequencies and mean scores. The data from the interviews were analysed for recurring phrases and issues. The findings and discussions are presented in the next chapter.

CHAPTER IV

ANALYSIS OF DATA

This chapter presents the analyses of the questionnaire and interviews. It begins by describing the demographics of the participants, followed by the results of Part II of the structured questionnaire items. Part III, the open-ended responses, are discussed next. The analysis of the interview findings is presented in the last section.

In the first three sections of this chapter information was developed from the responses of all participants. The final section, interviews, was based on the selection of nine participants.

Analysis of the Questionnaire

Discussions and tables are presented for the demographic, pre-workshop and each of the six steps in the DACUM workshop. These tables are set out to illustrate the responses for the first major research question-What are the perceived strengths and weaknesses of DACUM?

Background Information

Of the 27 participants in the study, the majority (59%) were male. The largest group of respondents, as shown in Table 4.1, were between the ages of 35 and 44 (39%), 30% were over the age of 45. Three of the respondents were under the age of 35.

Question #3 allowed for multiple responses. The figures in the table reflect the total number of participants in the respective DACUM workshops. A hand count of the responses revealed that nine had participated in more than one DACUM workshop at GMCC. One had participated in all seven workshops, two had participated in four workshops, and six had participated in two workshops. These results would indicate that at least 30% of the respondents were very familiar with the DACUM workshop process at GMCC. Of the 27 respondents, two (7%) were administrators, ten (37%) were instructors and 15 (56%) experts.

Eight respondents (29%) were employed in the area in which they participated in the DACUM workshop (as administrator, instructor or expert) between 1 and 5 years. Eight (29%) respondents were employed between 6 and 10 years, four (14%) were employed 11-15 years, and three (11%) between 16 and 20 years. Two respondents (7%) were employed for over twenty years. Overall, the majority of respondents had a moderate to high level of experience related to business.

Table 4.1

Frequencies and Percentages of Responses for Background

Item	f	Percent
1. Gender:		
Female	11	40.74
Male	16	59.26
2. Age:		
Under 35	3	11.11
35 - 44	16	59.26
Over 45	8	29.63
3. Participation in DACUM Workshops:		
Management Studies	14	51.85
Applied Research	6	22.22
Retail Management	6	22.22
International Business	6	22.22
Integrated Distribution Mgmt.	5	18.52
Library Technician Program	5	18.52
Fund Raisers	3	11.11
4. Committee Capacity:		
Occupational Expert	15	55.56
Instructor	10	37.04
Administrator	2	7.41
5. Years of Employment:		
1 - 5 years	8	29.63
6 - 10	8	29.63
11 - 15 years	4	14.81
16 - 20 years	3	11.11
over 20 years	2	7.41
6. Previous DACUM Participation Other Than at GMCC:		
No	24	88.89
Yes	3	11.11
7. Prior Knowledge of DACUM:		
No	22	81.48
Yes	5	18.52

Note. Two participants did not respond to the item regarding number of years employed.

Only three (11%) people had participated in workshops other than at GMCC. Those respondents indicated, in the comment section provided, that they had participated in a variety of workshops for several programs, including business education. When asked about familiarity with the DACUM process, only five (19%) of the respondents indicated any prior knowledge before their first workshop.

Structured Questionnaire Items

Items in the following tables, for each step in the DACUM workshop, are reported from highest to lowest mean scores by difference between occurrence and importance. They have been numbered for ease of reporting and discussion. The mean scores for occurrence and importance responses are also presented. The mean scores were derived from the three-point scale of 1) Not Evident, 2) Undecided and 3) Evident for Occurrence; 1) Unimportant, 2) Undecided and 3) Important for Importance. Where applicable, comments from the "Comment" section, which appeared after each step on the questionnaire, have been included. The items have been shortened for ease of presentation.

Pre-Workshop. Mean scores presented in Table 4.2 indicate that participants were highly satisfied with all items in the Pre-Workshop. The range of mean differences

between occurrence and importance from the highest (.30) for item 1-Informed of terminology to be used, to the lowest (.04) for item 6-Need for DACUM workshop was outlined, does not indicate any major discrepancies between what occurred prior to the workshop and what participants perceived as important for a DACUM Pre-Workshop.

Table 4.2

Mean Responses to Part A: Pre-Workshop

Item	Mean		Difference
	Occurrence	Importance	
1. Informed of terminology to be used.	2.33	2.63	.30
2. Received information explaining role.	2.56	2.74	.18
3. Sufficient notice given to participate.	2.78	2.93	.15
4. Received information explaining DACUM workshop process.	2.74	2.85	.11
5. Informed of expected outcomes of workshop.	2.67	2.74	.07
6. Need for DACUM workshop was outlined.	2.81	2.85	.04

The DACUM Workshop. Mean scores on Table 4.3 indicate that respondents were generally satisfied with all aspects related to Step 1: Orientation. The highest discrepancy score (.21) was for item 1-Orientation explained

procedures and concepts of DACUM. The lowest score (-.23) was for item 10-Sample DACUM chart provided to illustrate expected outcomes. This can be interpreted that the workshop utilized a sample DACUM chart (Occurrence), but that participants did not perceive this as highly important.

Comments provided indicated that respondents felt that the orientation was excellent, facilitators "did a great job," and the presentation was done in such a way as to eliminate the possibility of excluding important factors about the occupational background being examined. These comments reinforce the findings illustrated in the table.

Table 4.3

Mean Responses for Step 1: Orientation

Item	Mean Occurrence	Mean Importance	Difference
1. Orientation explained procedures and concepts of DACUM.	2.75	2.96	.21
2. Methods of occupational analysis, other than DACUM, explained.	1.87	2.00	.13
3. Participants motivated to become actively involved.	2.90	3.00	.10
4. Concepts of skill, attitude and knowledge defined.	2.67	2.77	.10
5. Illustration of chart enabled better understanding of purpose of DACUM workshop.	2.67	2.71	.04
6. Role of observers, if present, made clear.	2.74	2.76	.02
7. Process of identifying occupational tasks explained.	2.75	2.75	00
8. Explanation provided as to how information collected during workshop would be utilized.	2.88	2.85	-.03
9. Opportunity provided to explain occupational role.	2.71	2.46	-.15
10. Sample DACUM chart provided to illustrate expected outcomes.	2.88	2.65	-.23

Overall, respondents indicated a high degree of satisfaction with all items in Step 2: Review of the Occupation. The highest discrepancy score (.41), shown in Table 4.4, was item 1-The parameters of the occupation analysed were clearly established. Respondents indicated, in the comment section, that the workshop discussions "got off track."

The lowest discrepancy score (.25) was found on item 4-Acceptable working definition of the occupation was established. One respondent commented that the working definition never emerged.

Table 4.4

Means Responses for Step 2: Review of the Occupation

Item	Mean		
	Occurrence	Importance	Difference
1. Parameters of occupation analysed clearly established.	2.44	2.85	.41
2. General definition of occupation established.	2.52	2.81	.29
3. All job titles relating to occupation identified.	2.36	2.63	.27
4. Acceptable working definition of occupation established.	2.68	2.93	.25

Mean scores for Step 3 shown in Table 4.5, indicate that respondents were mostly satisfied with all items related to General Areas of Responsibility as part of a DACUM workshop. The highest discrepancy scores (.14) were for items 1, Criticism of evaluation of ideas was avoided; and item 2, Encouragement to share ideas relating to areas of responsibility in my occupation. Two respondents commented that they found the criticism to be very constructive, and helpful. Two others reported that there were many different people appearing during this step which made it difficult to stay on task.

The lowest discrepancy score (.04) was for item 5- Brainstorming provided an adequate method to identify duty areas of the occupation. A number of respondents indicated that brainstorming sessions were dominated by a small number of participants.

Table 4.5

Mean Responses for Step 3: General Areas of Responsibility

Item	Mean		
	Occurrence	Importance	Difference
1. Criticism or evaluation of ideas avoided.	2.54	2.68	.14
2. Encouraged to share ideas relating to areas of responsibility in my occupation.	2.50	2.64	.14
3. Review of duty and skill areas, to combine or modify conducted.	2.80	2.92	.12
4. Time taken for brainstorming session adequate.	2.74	2.80	.06
5. Brainstorming provided adequate method to identify duty areas of my occupation.	2.81	2.85	.04

The mean scores in Table 4.6, ranging from 2.63 to 2.78-Occurrence and 2.85 to 2.50-Importance, imply that respondents were also generally satisfied with all items for Step 4: Identification of Specific Tasks. The highest difference score (.29) was for item 1-Generally all participants contributed to identifying task statements. Several participants noted that some participants dominated this process, leaving others to feel they could/should not participate. One respondent also commented that

participants should be asked to bring a list, to shorten the time needed for this item.

Table 4.6

Mean Responses for Step 4: Identification of Specific Tasks

Item	Mean Occurrence	Mean Importance	Difference
1. Generally all participants contributed to identifying task statements.	2.63	2.92	.29
2. Participation maximized by utilizing brainstorming technique.	2.73	2.96	.23
Table 4.6 continued			
3. Task statements relevant to attitude identified.	2.70	2.85	.15
4. Task statements relevant to knowledge identified.	2.81	2.89	.08
5. Context for task statements outlined.	2.77	2.77	00
6. Task statements relevant to skills identified.	2.93	2.89	-.04
7. List of action verbs supplied for task statements.	2.88	2.84	-.04
8. Reference made to previously constructed DACUM charts for illustration.	2.78	2.59	-.19

The lowest difference score (-.19) was for item 10-Reference made to previously constructed DACUM charts for illustration. It would appear that the use of the DACUM chart did not necessarily help the participants to reach a better understanding of the objectives of this step.

The narrow range of mean scores (.18 to .04) for Step 5: Review/Refinement of Task Statements and Duty Areas reveals that respondents were not dissatisfied with the four items shown in Table 4.7 since both the occurrence and importance responses were high to begin with. A few respondents commented that item 3-Clarification made for ambiguous, redundant task statements, did not include screening the items for relevance. One participant noted that "facilitators were not familiar enough with much of the terminology involved in defining the occupation." It would appear that this created some difficulty for participants in clarifying the importance or relevance of some statements.

Table 4.7

Mean Responses for Step 5: Review/Refinement of Task Statements and Duty Areas

Item	Mean		
	Occurrence	Importance	Difference
1. Each task statement reviewed for relevance.	2.70	2.88	.18
2. Task statements refined accurately.	2.70	2.76	.06
3. Clarification made for ambiguous, redundant task statements.	2.85	2.89	.04
4. Task statements were concise.	2.81	2.85	.04

The mean scores reported in Table 4.8 for Step 6: Sequencing Task Statements and Duty Areas represent the overall satisfaction of respondents to the items. The high mean difference score (.53) for item 1-Instructor clarified task statements which would become instructional objectives, is a response to the discrepancy between what occurred during the workshop and what participants would have liked to have seen included. They evidently wanted more clarification than had been offered. This supports the previous response and comments of some difficulty regarding task statements clarification, in Step 5.

Table 4.8

Mean Responses for Step 6: Sequencing Task Statements and Duty Areas

Item	Mean Occurrence	Mean Importance	Difference
1. Instructor clarified task statements which would become instructional objectives.	2.12	2.65	.53
2. Entry level tasks identified (worker must be able to perform when entering occupation).	2.41	2.93	.52
3. Duty areas sequenced upon completion of task statement sequencing.	2.38	2.54	.16
4. Task statements organized to reflect sequence in which they would be performed.	2.50	2.60	.10
5. Concensus amongst participants of structure and content of duty areas, task statements.	2.33	2.41	.08
6. Rationale for sequencing provided.	2.59	2.65	.06
7. Task statements sequenced in a natural flow.	2.48	2.48	00
8. Duty areas, task statements reviewed after sequencing completion.	2.44	2.44	00

There were two items which yielded no discrepancies: 7-Task statements sequenced in a natural flow, and item 8-Duty areas, task statements reviewed after sequencing completion. It would appear that there was congruency between what occurred in the workshop and what participants perceived as important.

Part III - Participant's Perceptions

The following section describes the responses to the eight open-ended questions which completed the questionnaire. This section was included to address both major research questions:

1) How effective did participants perceive the DACUM process for articulating needs of industry for business education curriculum, and

2) What were the perceived strengths and weaknesses of the DACUM process of occupational analysis?

This section is organized around each of the questions. Because not every respondent replied to every question, the discussion will be descriptive, not thematic. Two participants did not reply to any of the questions.

1. What do you perceive as the strongest aspect of the DACUM workshop in which you participated at Grant MacEwan Community College? The majority of respondents felt that the strongest aspect of of the DACUM workshop was the use of occupational experts as committee members. One respondent commented this injected "real world" expertise into the

process. Several others indicated that identification of specific tasks was very beneficial to them and to the development of the program.

2. What do you perceive as the weakest aspect of the DACUM workshop in which you participated at GMCC? The range of comments by respondents to this item were quite varied. The most frequent comment as to the weakest aspect of the DACUM workshop was that there was not enough follow-up. A number of respondents indicated that the amount of time taken to complete the workshop was too long, while others felt that there was not enough time. Several pointed out problems with committee participants which included: overbearing participants, not enough experience in occupation to be considered an expert, too many managers, and continuity of participation. Although these comments were not recurring, it would appear that committee participation was a problem in some Business Education workshops.

3. To what extent did the DACUM workshop in which you participated articulate the program being developed with occupational needs? The respondents were generally in agreement that the DACUM workshop in which they participated had articulated the occupational needs with the program very well. A few participants commented that they were impressed with how the workshop showed occupational experts that GMCC was willing to include tasks and skills in the program to meet the needs of employers. Some respondents, however,

indicated that the workshop seemed to focus too much on the end results, with not enough attention or understanding of how they were achieved. They also felt there was not enough follow-up to fully assess articulation.

4. Was the time taken to complete the DACUM workshop adequate? If not, please explain. Most responses indicated that the time taken to complete the DACUM workshop was adequate. Those who indicated "no" did so because they did not believe enough time was allowed for certain items, such as reviewing and refining task statements.

5. How effective did you perceive your role as a DACUM committee member for identifying a curriculum for a program in the occupation? Several respondents indicated that they perceived their role as a DACUM committee member as being very effective. Other respondents did not perceive their role as effective because of limited involvement. This was due, in some cases, to other committee members being overbearing. Because instructors had been told to act as observers only, they indicated that they did not feel effective. As discussed in Chapter 2-Literature Review, The DACUM Handbook suggested that instructors participate only as observers.

6. Was the number of participants sufficient for the DACUM workshop? The majority of respondents agreed that the number of participants was sufficient for the DACUM

workshop. One person felt there could have been more, while another felt there were too many.

7. How effective did you perceive the DACUM workshop as a process for analysing the occupation? Less than half the respondents to this question perceived the DACUM workshop as an effective process for analysing the occupation. Some respondents did not percieve the DACUM workshop as effective because they felt a larger sample from the occupation was needed for verification during the workshop process. Others indicated that a better cross-section of occupational experts was needed, and that the needs of large companies and government differed from small business so they may not have been addressed.

8. What suggestions, if any, do you have for future DACUM workshops? Two major issues were identified from the suggestions for future DACUM workshops: time, and follow-up. The time aspect of the workshop was repeatedly mentioned by respondents as being too short. They suggested that establishing a timetable, or revising the agenda to allow more time on items, when necessary, would be appropriate.

The majority of respondents to this question suggested that more attention be paid to follow-up. Several respondents indicated that they would like to be contacted as soon as possible after the workshop to view the finished DACUM chart. Other suggestions included the establishment

of advisory committees to review the programs periodically, and more frequent use of the DACUM workshop process (e.g., every two years).

In summary participants indicated that they perceived the strongest aspect of DACUM was the use of occupational experts as committee members. This was particularly important because the occupational experts identified the specific tasks to be performed for the occupation. The weakest aspect of DACUM appears to be the slow follow-up process. Participants indicated that too much time elapsed between the workshop and the development of the DACUM chart.

There was general agreement that DACUM provided the opportunity to articulate the program, however, less than half the respondents perceived the workshop as effective. It would appear this was because participants did not feel their was an adequate sample of occupational experts represented.

Participants identified two issues for further workshops: allow more time, and improve follow-up procedures. Although respondents had indicated the time allowed for the workshop was adequate, they asked that more time could be allotted to some of the items, and less to others. It was suggested that follow-up be as soon as possible after the workshop, and include all participants.

Analysis of the Interviews

In this section the analysis of the interviews is discussed, based on themes and issues which emerged. The interview schedule included three objectives: 1) to elicit participant perceptions of DACUM process, 2) to understand how participants could be more effective participants in DACUM workshops, and 3) to explore participant perception of effectiveness of DACUM workshops for articulating the needs of business and industry.

Three questions, one for each of objective, were asked. Because only three respondents from each group (administrator, instructor and occupational expert) were interviewed, the discussion will be by question, not group, in order to maintain the anonymity of respondents. Where appropriate, for interpretative meaning, a respondent may be identified by the type of group membership.

1. Describe your thoughts and reflections on the DACUM process.

Two common themes emerged for the first question: committee participation and follow-up procedures. The first theme, committee participation, focused on the use of occupational experts as committee members. Overall, the participants' reactions and reflections of committee participation was positive.

Most interviewees stated that the occupational experts were fundamental to the success of the workshops. Responses

included: "occupational experts must have a lot of experience to be able to define the occupation," and "it is good there is expert input because practitioners are the best source." One respondent declared that "the input from occupational experts was essential to the outcomes of the workshop." Another saw the DACUM process as "an excellent way to get the business community in to describe needs...the committee mix (administrators, instructors and occupational experts) is very important." Those comments and statements reflected a very positive view of the DACUM process, and the importance of occupational experts as committee members.

One interviewee did not agree that committee participation was adequate because "administrators and instructors should have more input...they were good for focusing," and another pointed out that "as a silent observer it was hard not to put more in to the process." As previously reported in Chapter II, the roles of administrators and instructors in DACUM workshops as participants, is to observe. Apparently the lack of interaction from two key groups was a concern which all groups would like addressed in future workshops.

The second theme was about follow-up procedures. One participant stated "there is often a giant gap between the workshop and finished product, which causes problems in validating the programs." Another interviewee felt that "the problem (of follow-up) lay in a lack of leadership and understanding as to what to do with data collected in the

workshops." If the procedures of DACUM were being followed, then follow-up appears to be a problem, according to those interviewed.

2. Describe how you could have been a more effective participant in the DACUM process.

All participants were satisfied with their role during the workshop, however several felt they could have been more effective if more "up-front" materials had been made available. One interviewee suggested that "an orientation session be held the evening before (the workshop) to cut down on discussion time." Another pointed out "by sending out better orientation materials, we (occupational experts) could have come with lists prepared." One occupational expert said "I didn't know what to expect up front." While the interviewees felt they were effective, it would appear that better preparation, prior to the orientation, would have heightened their effectiveness. Because of the overall satisfaction however, DACUM organizers at GMCC may not wish to alter the participatory aspect of the workshops.

3. How effective was the DACUM workshop for articulating the needs of industry in developing occupational programs?

Of the nine participants interviewed, five felt the workshop was very effective, three were unsure, and one felt it was not at all effective. The use of advisory committees to articulate programs was identified as the major issue.

Most participants believed that using an advisory committee would allow more opportunities to update and revise curricula. Advisory committees (experts from business and industry) do have a permanent role in some Business Education programs at GMCC. Where an advisory committee does exist, they are brought in after the workshop to validate DACUM charts. Members of advisory committees, however, do not usually participate in the workshop process at GMCC. It would appear that their participation is seen as important to the interviewees.

Respondents who thought the workshop effective said: "It was very successful in articulating this program; it brought out where problem areas were, and helped members of the profession identify where they could improve," and "other than needs assessment, I see no better way of articulating." Another interviewee stated, "it brought out problem areas...the input from different groups made it easier to improve on weak areas."

One respondent was unsure whether the DACUM was effective for articulating because "(the workshop) has become part of the political process within the institution...it is astute to participate, therefore DACUM is accepted within the institution; however we're really not sure it works." Another interviewee was unsure about effectiveness as "the use is dependent upon the program/college orientation...if developers are realists (they maintain links with industry, and are more in tune

with needs and demands) then DACUM is a good process. If developers are isolationists (include what ought to be, not as it is) they will not be comfortable and retreat. DACUM will be seen as threatening." One occupational expert pointed out that "the methodology was inappropriate...needs to go after insights... facilitators must be more probing for articulation...did not cover cover communications, inter-personal skills, etc."

Another participant said that DACUM was not an articulation process because "The workshop is a 'one-shot' deal. You don't ever see the other participants again." This person also felt that "participation would be valuable to advisory committees" as they have a more long-term commitment to the program.

Overall interviewees were satisfied with their role as effective participants in the DACUM workshop, noting that any improvement could be that they receive more information before the workshop.

Summary

This chapter provided a description of the respondents and reported their responses to the research questions of the study. Based on these data, the majority of respondents were male. The largest group of respondents were between the ages of 35 and 44. At least 30% of the respondents were familiar with the DACUM workshop process at GMCC. Occupational experts were the largest group to respond.

The difference means for Part II-Structured Questionnaire Items, shows that respondents were generally highly satisfied with the pre-workshop and DACUM workshops as conducted for the Business Education Division at Grant MacEwan Community College. Generally, the means indicated very little difference between occurrence (what happened) and importance (what was perceived as important). Where a high or low difference mean score did appear, comments were usually provided by respondents expressing those discrepancies.

The majority of interviewees agreed that occupational experts were essential to the success of workshops, and that better follow-up procedures should be implemented. Most interviewees stated that the DACUM workshop was effective for articulating the needs of industry in developing occupational programs. The respondents indicated that the use of advisory committees, both during and after the DACUM workshops, was highly desireable.

CHAPTER V

SUMMARY, CONCLUSIONS AND IMPLICATIONS

This final chapter contains a summary of the study relative to its purpose, research methodology, and major findings. It also includes the conclusions which emerged from the study findings, and the recommendations of the study. A concluding statement completes this chapter, and the thesis.

Summary

Purpose of the Study

The major purpose of this study was to examine the effectiveness of the DACUM workshop process of occupational analysis in developing vocational curriculum for Business Division programs at Grant MacEwan Community College.

Two major research questions were used to as a guide to the development of the study and for the analysis of the data. The first question identified how effective the participants perceived the DACUM process for articulating the needs of industry for the business education curriculum. The second question identified what the perceived strengths and weaknesses of the DACUM process of occupational analysis were.

A review of the literature was completed so that the findings of this study could be compared with the findings in the related literature. The review of the literature revealed that the three basic components of vocational

education are people, society, and technology. The identification of who will perform jobs, for whom, and how are all to be included in occupational analysis. The three components were also identified in the DACUM process of occupational analysis.

The literature revealed that articulating business programs is very important to business education programs. The process of occupational analysis allows for articulation by using occupational experts to identify the knowledge, skills, and attitudes required of workers. The DACUM process of occupational analysis is used by many postsecondary institutions, of which Grant MacEwan Community College is one, to articulate business programs with the business community's needs.

Research Methodology

An eleven page questionnaire and interviews were used to collect data in this research study. The questionnaire was divided into three parts: background information, structured items, and open-ended responses. The background information requested demographic information about participants. The structured items included statements from the pre-workshop and six steps of DACUM; the open-ended responses elicited participant's perceptions of the DACUM process. The interviews included three questions asking: 1) participants to describe their thoughts and reflections on the DACUM process, 2) how participants could have been

more effective during the DACUM process, and 3) how effective the DACUM workshop was for articulating the program.

The questionnaire was pilot tested by five participants of DACUM workshops at GMCC for programs other than business education. The pilot test was completed by one administrator, one instructor, and three occupational experts. Suggested changes, modification and revisions were incorporated before mailing to the sample population used for this study.

The questionnaire population was a sample of all committee members who had participated in DACUM workshops at Grant MacEwan Community College, Business Education Division between 1984-1988. The questionnaire was mailed to a sample of 35 participants, randomly identified by program heads and the researcher. Of those mailed, 27 were returned and used for data analysis, a response rate of 76%. The interviews were conducted with nine respondents.

The data from the questionnaire were processed to report the descriptive findings. Frequency counts and mean scores were reported in the form of tables, using the Lotus 1-2-3 Spreadsheet package. The data from Part III of the questionnaire and the interviews were analysed for common themes and issues.

Review of Findings

The findings from this study are summarized by the background information of the respondents and by the two research questions. The discussion is based on a combination of data sources: survey items, comments sections and interview responses.

Description of the respondents. Two administrators, ten instructors, and 15 experts responded to the questionnaire, with the majority (59%) being male. The respondents' ages were primarily between thirty-five and forty-four. Nine of the respondents had participated in more than one DACUM workshop at GMCC. Sixteen respondents had been employed as an administrator, instructor or expert between one and ten years; seven were employed between 11 to 20 years, and two were employed for over 20 years. Only three respondents had participated in workshops other than at GMCC, and only five were familiar with the DACUM process prior to their first workshop.

Question 1: Participant's perceptions of the DACUM process for articulating the needs of industry with the business education curriculum. There was general agreement amongst the participants that the DACUM process was adequate for articulating the needs of industry with business education programs. Most respondents stated that the use of occupational experts, to some degree, ensured articulation.

While the majority of participants were impressed with the process some indicated that more focus could have been placed on the process, and not so much on the end results. Other respondents indicated that using advisory committees, during the DACUM process, would be appropriate.

Some respondents were unsure of the effectiveness of the DACUM process for articulation because of several reasons. Those reasons included: it was politically astute to attend, developers must be realists or they see DACUM as threatening, and the methodology was inappropriate because it did not probe enough for articulation. Only one respondent did not perceive the DACUM process as adequate for articulating, because it was a 'one-shot' deal, and no follow-up was done with the original committee members.

Question 2: The perceived strengths and weaknesses of the DACUM process. Overall the respondents were highly satisfied with the DACUM workshops conducted at Grant MacEwan Community College for the Business Education Division. Respondents perceived the use of occupational experts as committee members to be the strongest aspect of DACUM. Participants found this especially important when identifying the specific skills, attitude and knowledge required for the occupation.

The weakest aspect of the DACUM process was identified as the slow follow-up procedure. Many participants felt

that too much time elapsed between the completion of the workshop and the development of the DACUM chart.

Along with slow follow-up procedures, respondents identified several other aspects which they considered weaknesses in the DACUM process. The use of the sample DACUM chart, during the workshop, did not particularly assist participants in understanding the process. Some respondents said that not all committee members were given an equal opportunity to participate, specifically instructors and some occupational experts who were not as vocal as others. The participants would have also liked to receive more information before the workshop so they could be better prepared for the first step of the workshop.

Conclusions

This section outlines six conclusions that were formulated based on the literature review and the findings. The six conclusions include: articulation, advisory committees, follow-up procedures, sample DACUM charts, committee participation, and pre-workshop information. A discussion of the findings is also included.

1. The research in this study shows that participants generally perceived the DACUM workshop process as very good for articulating the needs of industry with the business education curriculum. Participants noted that the involvement of expert workers, and that recognition by GMCC to accommodate industry's needs, were very important. The

findings of this study support the conclusions of Finch & McGough (1982) that the strength of articulation lies in its accommodating and integrating industry's needs.

The conclusion here also supports the findings of Klingman and Gardner (1982), Norton (1985), and Abella (1986). All state that the use of expert workers during occupational analysis is they are essential to identify the skills, attitude, and knowledge required of workers in their occupational area.

2. Some concern was noted, however, that advisory committees should have more input during the workshop. Norton (1985) recommends the use of advisory committees to determine what occupations should be analysed, and to identify employers to serve as committee members.

Norton, does not, however, advocate the use of advisory committees during the DACUM workshop process. The findings of this research only partially support Norton's conclusions. Participants would have liked to have seen advisory committee members present at both the DACUM workshop and during the validation of the DACUM chart.

3. Participants noted that slow follow-up procedures, after the workshops, were a weakness in the DACUM process at GMCC and may cause problems with articulating programs. Although this study did not explore the DACUM process after the workshop stage, it did find that participants were concerned that the workshop process was not effective for

articulation if they were not contacted after the development of the DACUM chart for validation.

There were no findings in the literature review which mentioned follow-up procedures with regard to workshop committee participants. However, some participants wanted to be involved, in some way, to both construct the DACUM chart and validate the program, thus ensuring that articulation was adhered to in the final stages of DACUM, as well as the early and middle stages.

4. The findings in this study do not support the findings in Norton (1985), that the sample DACUM chart should be used to illustrate the expected outcomes of the workshop. Although the sample DACUM chart was illustrated during Step 4: Identification of specific tasks, participants commented that it was not particularly helpful in clarifying the how the material gathered during the workshop would be utilized to develop the curriculum.

The participants stated that better explanations of the sample DACUM chart, and its function, may have been appropriate.

5. Participants expressed concerned that some committee members were overbearing during the chart construction, thus eliminating the opportunity for others to effectively participate. The participants wanted to be given the opportunity to have more individual input. The findings here are supporting by the findings of Mason (1984)

that individuals and groups review the charts to ensure that less vocal participants have an opportunity to contribute.

The participants were also concerned that the opportunity did not always exist for desired input by all members of the committee. The findings in this study do not agree with Norton (1985), as he was emphatic in stating that instructors should never serve as participants on a committee. The findings here do, however, agree with Mason's (1984) conclusion that instructors should not attend as observers, but as active participants. Participants would like to see the role of the instructors, as observers, be expanded so they are more actively involved.

6. The research in this study shows that participants want better information provided before DACUM workshops. The participants commented that better 'up-front' preparation for the DACUM workshops at GMCC may have assisted some workshop participants in focusing, and staying on task.

This finding is supported by the findings of Klingman and Gardner (1982), and Mason (1984). Both studies concluded that pre-orientation sessions helped to orient the committee members better and assisted in completing workshops in less time.

Recommendations

Four sets of recommendations are outlined in this section: pre-workshop, workshop, post-workshop, and research. These are based on the research findings and conclusions. The recommendations are offered based on the limited generalizability of the findings.

Pre-Workshop

1. Grant MacEwan Community College, Research, Development and Evaluation Division might consider preparing more detailed orientation packages for committee members before they participate in DACUM workshops for the Business Education Division. The orientation packages could outline the committee member's role, and be more concise in stating expected outcomes.

2. A short pre-orientation session could be held the evening before the DACUM workshop to allow committee members the opportunity to become better acquainted. The pre-orientation session could be one to two hours long. At that time participants could be asked to start preparing lists describing the duties and tasks relevant to their occupation.

Workshop

1. More care should be taken to ensure that all committee members are given the opportunity to contribute when defining the occupation. Facilitators should not allow

overpowering participants to take over the process at the expense of less assertive members. The role of instructors as committee members could be more accurately defined, so that they either become active participants, or do not attend workshops at all.

2. The sample DACUM chart could be introduced during an earlier step in the workshop. More time could be spent on explaining how the chart is developed from the workshop results. More concise explanations could be provided by facilitators about how the DACUM charts are used to construct curricula.

3. Grant MacEwan Community College might consider the use of advisory committees during the workshop process, and as an ongoing part of all program development. The advisory committees may be useful to assist in developing and adding continuity to the business education curricula.

Post-Workshop

1. There could be a better system implemented for the follow-up procedures once the DACUM workshop is completed. Contact should be made with committee members to assure them that their input was valuable and being used.

2. GMCC might consider including participants in the validation process, or holding a meeting once the DACUM chart is developed. This may give the participants the opportunity to ensure that articulation has taken place.

3. Members of advisory committees could be consulted after the DACUM workshop, to review the results. The advisory committee may be able to identify further information which should be added to the DACUM chart before its final development stages.

Research

1. This study examined the effectiveness of the DACUM workshop process for Grant MacEwan Community College, Business Education Division from 1984-1988, but it did not examine the final stages of the DACUM process. Further research could be conducted to examine the effectiveness of the DACUM workshop in relation to the development of the DACUM chart and the curriculum.

2. Although this study identified what the major strengths and weaknesses were of the DACUM process of occupational analysis, it did not seek to identify the depth of those weaknesses. Further research, using more analytical and descriptive information, may identify the depth of the weaknesses.

3. This research was conducted to identify participant's perceptions as to the effectiveness of DACUM as a process for articulating business education programs. A study could be conducted which would identify whether the DACUM process articulates programs for an appropriate period of time, in accordance with the needs of industry.

Concluding Statement

Workshop committee members have reported a high degree of satisfaction with the DACUM workshops conducted at Grant MacEwan Community College for the Business Education Division, although indicating some areas for improvement. The constant changes in technology, which direct the focus of business programs, will provide a challenge for users of DACUM in developing future relevant curricula.

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APPENDIX I

Letter from K.Preclaw-Research, Development and Evaluation Division, Grant MacEwan Community College-Introducing Researcher to Program Heads

Grant MacEwan Community College

Mailing Address
PO Box 1796 Edmonton
Alberta Canada T5J 2P2

March 28, 1988

To: Al McQueen
Acting Dean, Business Division

From: Kathleen Preclaw
Program Developer, R&D

Re: Review of the DACUM process

A graduate student from the University of Alberta has requested the opportunity to conduct a research project at GMCC as a partial requirement for a Masters in Education. Dana Goedbloed, of the Vocational/Industrial Department, is proposing to conduct a review of the DACUM process applied at GMCC. The Business Division has been specifically targeted for the study.

Dana proposes to review both procedures and outcomes of a DACUM analysis. To do the study she will need to gather information, through questionnaires, from program heads, faculty, and committees involved recently in a DACUM occupational analysis. I have recommended that she contact you and specific Business Division Program Heads to explain her proposal, request your participation and obtain a list of appropriate contact people.

I written to Millard Evans, Lian Smith, Tony Fell, Karen MacKinnon, and Hazel Sutherland to introduce the project. Staff participation is totally voluntary...but here is the hook....I would value this type of independent evaluation of the DACUM process. The results will help improve our service to your Division. I had been planning to conduct such an evaluation myself but a graduate student would be more rigorous and objective. Therefore, I would encourage the Division's participation.

If you have questions or concerns please call.

Thanks.

Kathy

cc Wilbur Collin

Seventh Street Plaza North
10030 - 107 Street
T5J 3E4
(403) 441-4600

Jasper Place Campus
10045 - 156 Street
T5P 2P7
(403) 483-4411

Cromdale Campus
8020 - 118 Avenue
T5B 0R6
(403) 474-8521

Mill Woods Campus
7319 - 29 Avenue
T6K 2P1
(403) 462-5501

APPENDIX II

Letter to Pilot Study Participants

D. Goedbloed
c/o Industrial/Vocational Education
6th Floor, Education South
University of Alberta
Edmonton, AB T6G 2G5

May 16, 1988

Dear

Attached is the questionnaire I spoke with you about last week, on the telephone. Thank you for agreeing to participate in this pilot study. I am conducting this pilot study so that I may receive feedback and comments from previous DACUM committee members.

The study I am completing, in partial fulfillment of the Masters of Education degree, is to examine the effectiveness of DACUM as a process of occupational analysis. The specific area I am examining is the Business Division at Grant MacEwan Community College, particularly those workshops conducted between 1984-1988.

Your role in this pilot test is to add, change, delete or revise any items you feel necessary. Please mark your changes on the questionnaire, along with your responses. Would you also please keep track of the time it takes you to complete the questionnaire, and mark the time on the first page, upper left-hand corner.

May I once again thank you for completing this pilot study. Your assistance is of great value to the study.

Sincerely,

Dana Goedbloed
Graduate Student

(432-5641)

APPENDIX III

Interview Schedule

**INTERVIEW SCHEDULE FOR STUDY
ON DACUM PROCESS
AS A PROCESS FOR OCCUPATIONAL ANALYSIS**

Interview Objectives:

1. To elicit participant perceptions of DACUM process
2. To understand how participants feel they could more effectively participate in DACUM workshops
3. To understand participant perception of effectiveness of DACUM process for articulation

Interview Schedule:

The interviews will be semi-structured. Three questions will be asked. Any discussion which is relevant to the objectives will be pursued within a framework of an informal dialogue. The introductory statement and main questions are:

There has been a recognition of the need to articulate occupational programs with the needs of industry. DACUM (Developing A CurriculUM) is a process of occupational analysis utilized to articulate the needs of industry with occupational programs being developed.

1. Describe for me your thoughts and reflections on the DACUM process.
2. How could you have more effectively participated in the DACUM workshops?
3. How effective was the DACUM workshop for articulating the needs of industry in developing an occupational program?

APPENDIX IV

Consent Form

INTERVIEW PROCESS AND CONSENT FORM

This interview is to be used as a source of information for a study on the DACUM workshops conducted at Grant MacEwan Community College, Business Division.

Your responses will be recorded by me in written form. Data will be presented in a general manner in the study. All responses which are reported in the study will be presented as anonymous. Should I quote you directly in the study, a copy of that quote as it will be reported will be sent to you. All transcriptions will be destroyed upon completion of the study.

You have the right to opt out of the study, or not respond to any question.

Thank you for your help in this study.

_____ _____

Date Interviewer

The study has been explained to me and I have had an opportunity to ask questions. I have read the above, understand it, and voluntarily consent to participate in this study under the terms outlined.

_____ _____

Date Interviewee

APPENDIX V

Letter Accompanying Questionnaire

May 20, 1988

Dear

Attached is a questionnaire for a study I am conducting in partial fulfillment of the Masters of Education degree. This study is focusing on DACUM (Developing A Curriculum) workshops which were conducted at Grant MacEwan Community College, Business Division, between 1984-1988. The purpose of the study is to examine the perceived effectiveness of DACUM as an occupational analysis process. The major questions I am addressing are: 1) how effective is the DACUM process for articulating the needs of industry in developing occupational programs, and 2) what are the strengths and weaknesses of the DACUM process.

I am seeking your participation in this project because you participated in a DACUM workshop at Grant MacEwan Community College. Your cooperation in completing and returning the questionnaire will provide important data for the study. All your responses and comments will be reported as anonymous. To ensure anonymity, a sheet has been attached to the front of the questionnaire. Please print your name in the blank on the sheet, tear the sheet off the questionnaire and place the sheet in the white envelope. Place the envelope, along with the completed questionnaire, in the manila envelope and return to me, using the return envelope provided.

In addition to the questionnaires, interviews will be conducted with volunteers during the second week of June. I will be calling on May 30 to ensure that you have received the questionnaire and clarify any questions you may have. At that time I may also discuss the possibility of your participation in an interview.

The questionnaire will take approximately 40 minutes to complete. I would very much appreciate your taking the time to complete the questionnaire. Please feel free to contact me at the number below if you have any questions.

Sincerely,

Dana Goedbloed
Graduate Student

APPENDIX VI

Questionnaire

96

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PARTICIPANT SURVEY

PART I: BACKGROUND INFORMATION

This questionnaire is part of a project on occupational analysis utilizing a DACUM process. Please do not write your name on the questionnaire, as anonymity is important.

1 1
1 2 3 4

Please complete Part I by circling the appropriate response.

1. Gender:

Female	1	5
Male	2	

2. Age:

Under 35	1	6
35 - 44	2	
Over 45	3	

3. In which DACUM workshop(s) did you participate at Grant MacEwan Community College? (Circle all that apply).

Library Technician Program	1	7
Fund Raisers	1	8
Applied Research	1	9
Management Studies	1	10
International Business	1	11
Integrated Distribution Management	1	12
Retail Management	1	13

4. In what capacity did you serve as a DACUM committee member? (Circle one only).

Administrator (from GMCC)	1	14
Instructor (from GMCC)	2	
Occupational Expert	3	

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5. How many years were you employed in the capacity you indicated in question 4? (Circle one only). 15

1 - 5 years	1
6 - 10 years	2
11 - 15 years	3
16 - 20 years	4
over 20 years	5

6. Have you participated in DACUM workshops at institutions other than Grant MacEwan Community College? 16

Yes	1
No	2

If yes, please indicate where, and the name of the occupation analysed:

_____

_____

7. Were you familiar with the DACUM approach to occupational analysis prior to participating in the workshop? 17

Yes	1
No	2

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PART II: THE DACUM PROCESS

Part II is divided in two parts: Part A: Pre-Workshop and Part B: The Workshop Steps.

The following statements relate to the DACUM process. For each statement, please indicate 1) the degree to which the statement occurred, and 2) how important the statement was to you at the time of the workshop.

The scale for each response is shown as:

OCCURRENCE

/1	/2	/3	/4	/5
Clearly Lacking	Somewhat Lacking	Undecided	Somewhat Evident	Clearly Evident

IMPORTANCE

/1	/2	/3	/4	/5
Very Unimportant	Unimportant	Undecided	Important	Very Important

An example of a statement and response are:

	OCCURRENCE C.L.--C.E.	IMPORTANCE V.U.--V.I.
Methodology was explained	1 2 (3) 4 5	1 2 3 (4) 5

For OCCURRENCE, the respondent is undecided about the degree to which the methodology explanation occurred.

For IMPORTANCE, the respondent felt that it was important that a statement about methodology was provided.

The following statements relate to the situation before the DACUM workshop in which you participated. Use the scale described above. Please complete the OCCURRENCE response first, and then the IMPORTANCE reponse.

PART A: PRE:WORKSHOP

	OCCURRENCE C.L.--C.E.	IMPORTANCE V.U.--V.I.	
1. I received information explaining the DACUM workshop process	1 2 3 4 5	1 2 3 4 5	18-19

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2.	I received information explaining my role in the DACUM workshop process	1 2 3 4 5	1 2 3 4 5	20-21
3.	I was informed of terminology to be used in the workshop	1 2 3 4 5	1 2 3 4 5	21-22
4.	I was informed of the expected outcomes of the workshop	1 2 3 4 5	1 2 3 4 5	23-24
5.	Sufficient notice was given for me to participate	1 2 3 4 5	1 2 3 4 5	25-26
6.	The need for the DACUM workshop was outlined	1 2 3 4 5	1 2 3 4 5	27-28

PART B: THE DACUM WORKSHOP

The following sections will take you, step by step, through the DACUM workshop. Since it may have been several years since you participated in the DACUM workshop you may wish to read through the steps. The response scale remains the same: 1) the degree to which the statement occurred, and 2) how important the statement was to you at the time of the workshop.

OCCURRENCE	IMPORTANCE
1 CLEARLY LACKING	1 VERY UNIMPORTANT
2 SOMEWHAT LACKING	2 UNIMPORTANT
3 UNDECIDED	3 UNDECIDED
4 SOMEWHAT EVIDENT	4 IMPORTANT
5 CLEARLY EVIDENT	5 VERY IMPORTANT

The six steps which make up the DACUM workshop are as follows:

1. The orientation
2. Review of the occupation
3. The general areas of responsibility of the occupation
4. Identification of specific tasks for the occupation
5. Reviewing and refining task statements and duty areas
6. Sequencing the task statements and duty areas

Please feel free to add any comments after each of the steps, in the space provided.

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	OCCURRENCE C.L.--C.E.	IMPORTANCE V.U.--V.I.	
Step 1: Orientation			
1. The orientation explained the procedures and concepts of DACUM	1 2 3 4 5	1 2 3 4 5	29-30
2. The opportunity was provided to explain my occupational role	1 2 3 4 5	1 2 3 4 5	31-32
3. Participants were motivated to become actively involved	1 2 3 4 5	1 2 3 4 5	33-34
4. The role of observers, if present, was made clear	1 2 3 4 5	1 2 3 4 5	35-36
5. Methods of occupational analysis, other than DACUM, were explained	1 2 3 4 5	1 2 3 4 5	37-38
6. The concepts of skill, attitude and knowledge were defined	1 2 3 4 5	1 2 3 4 5	39-40
7. The process of identifying occupational tasks was explained	1 2 3 4 5	1 2 3 4 5	41-42
8. An explanation was provided as to how the information collected during the DACUM workshop would be utilized	1 2 3 4 5	1 2 3 4 5	43-44
9. A sample DACUM chart was provided to illustrate the expected outcomes	1 2 3 4 5	1 2 3 4 5	45-46
10. The illustration of the chart enabled me to better understand the purpose of the DACUM workshop	1 2 3 4 5	1 2 3 4 5	47-48

Comments: _____

_____

_____

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Step 2: Reviewing the Occupation

		OCCURRENCE C.L.--C.E.	IMPORTANCE V.U.--V.I.	
1.	A general definition of the occupation was established	1 2 3 4 5	1 2 3 4 5	49-50
2.	The parameters of the occupation to be analysed were clearly established	1 2 3 4 5	1 2 3 4 5	51-52
3.	All job titles relating to the occupation were identified	1 2 3 4 5	1 2 3 4 5	53-54
4.	An acceptable working definition of the occupation was established	1 2 3 4 5	1 2 3 4 5	55-56

Step 3: General Areas of Responsibility

		OCCURRENCE C.L.--C.E.	IMPORTANCE V.U.--V.I.	
1.	I was encouraged to share ideas relating to areas of responsibility in my occupation	1 2 3 4 5	1 2 3 4 5	57-58
2.	Criticism or evaluation of ideas was avoided	1 2 3 4 5	1 2 3 4 5	59-60
3.	Brainstorming provided an adequate method to identify duty areas of the occupation	1 2 3 4 5	1 2 3 4 5	61-62
4.	The time taken for the brainstorming session was appropriate	1 2 3 4 5	1 2 3 4 5	63-64
5.	A review of duty and skill areas, to combine or modify them, was conducted	1 2 3 4 5	1 2 3 4 5	65-66

Comments: _____

_____

_____

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Step 4: Identification of Specific Tasks

		OCCURRENCE C.L.--C.E.	IMPORTANCE V.U.--V.I.	
1.	A list of action verbs was supplied for task statements	1 2 3 4 5	1 2 3 4 5	67-68
2.	Reference was made to previously constructed DACUM charts for illustration	1 2 3 4 5	1 2 3 4 5	69-70
3.	Participation was maximized by utilizing the brainstorming technique	1 2 3 4 5	1 2 3 4 5	71-72
4.	Context for task statements was outlined (The worker must be able to _____)	1 2 3 4 5	1 2 3 4 5	73-74
5.	Task statements relevant to attitude were identified	1 2 3 4 5	1 2 3 4 5	75-76
6.	Task statements relevant to knowledge were identified	1 2 3 4 5	1 2 3 4 5	77-78
7.	Task statements relevant to skills were identified	1 2 3 4 5	1 2 3 4 5	79-80
				1 2
8.	Generally all participants contributed to identifying task statements	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5-6

Comments: _____

_____

_____

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Step 5: Review and Refinement of Task Statements and Duty Areas

		OCCURRENCE C.L.--C.E.	IMPORTANCE V.U.--V.I.	
1.	Each task statement was reviewed for relevance	1 2 3 4 5	1 2 3 4 5	7-8
2.	Clarification was made for ambiguous or redundant task statements	1 2 3 4 5	1 2 3 4 5	9-10
3.	Task statements were refined accurately	1 2 3 4 5	1 2 3 4	11-12
4.	Task statements were concise	1 2 3 4 5	1 2 3 4 5	13-14

Comments: _____

_____

_____

Step 6: Sequencing Task Statements and Duty Areas

		OCCURRENCE C.L.--C.E.	IMPORTANCE V.U.--V.I.	
1.	Rationale for sequencing was provided	1 2 3 4 5	1 2 3 4 5	15-16
2.	Task statements were organized to reflect the sequence in which they would be performed	1 2 3 4 5	1 2 3 4 5	17-18
3.	Task statements were sequenced in a natural flow	1 2 3 4 5	1 2 3 4 5	19-20
4.	Duty areas were sequenced upon completion of task statement sequencing	1 2 3 4 5	1 2 3 4 5	21-22
5.	Duty areas and task statements were reviewed after completion of sequencing	1 2 3 4 5	1 2 3 4 5	23-24
6.	There was a concensus amongst participants of the structure and content of duty areas and task statements	1 2 3 4 5	1 2 3 4 5	25-26

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7.	An instructor clarified task statements which would become instructional objectives	1 2 3 4 5	1 2 3 4 5	27-28
8.	Entry-level tasks were identified (those tasks a worker must be able to perform when entering the occupation)	1 2 3 4 5	1 2 3 4 5	29-30

Comments: _____

_____

_____

PART III: PARTICIPANTS PERCEPTIONS

This section allows you to further expand upon your experience and perceptions of the DACUM workshop. You may wish to refer back to the steps in the DACUM workshop process in the questionnaire to refresh your memory.

1. What do you perceive as the strongest aspect of the DACUM workshop in which you participated at Grant MacEwan Community College?

_____

_____

_____

2. What do you percieve as the weakest aspect of the DACUM workshop in which you participated at Grant MacEwan Community College?

_____

_____

_____

3. The work "articulation"--cooperation between business, industry and educational institutions in developing occupational programs--has been used to described occupational analysis.

To what extent did the DACUM workshop in which you participated articulate the program being developed with occupational needs?

_____

_____

_____

4. Was the time taken to complete the DACUM workshop adequate? If not, please explain.

_____

_____

_____

5. How effective did you perceive your role as a DACUM committee member for identifying a curriculum for a program in the occupation?

_____

_____

_____

6 Was the number of participants sufficient for the DACUM workshop?

_____

_____

_____

7. How effective did you perceive the DACUM workshop as a process for analysing the occupation?

_____

_____

_____

8. What suggestions, if any, do you have for future DACUM workshops?

_____

_____

_____

Please return the complete questionnaire and the response form in the enclosed, self-addressed, stamped envelope by June 15, 1988.

THANK YOU

APPENDIX VII

Follow-up Letter

June 10, 1988

Please accept this letter as a reminder that I have not yet received your completed questionnaire for the study I am completing for the Masters of Education degree. Your responses provide very valuable information which will be included in the study. As the completed questionnaires must be returned to me by June 15 I would ask that you take thirty minutes and return to me in the envelope provided.

Should you have any questions regarding the study, or the questionnaire I would be pleased to answer them. I may be contacted, during the day, at my office number (432-5641), and in the evenings at 433-7053.

Thank you for your attention to this request.

Sincerely,

Dana Goedbloed
Graduate Student